

CRAIG/KLAWOCK HERRING SPAWN-ON-KELP POUND FISHERY
1995 MANAGEMENT PLAN



Regional Information Report No.¹ 1J94-29

Alaska Department of Fish and Game
Commercial Fisheries Management and Development Division
Juneau, Alaska

December 1994

¹ The Regional Information Report Series was established in 1987 to provide an information access system for all unpublished divisional reports. These reports frequently serve diverse ad hoc informational purposes or archive basic uninterpreted data. To accommodate timely reporting of recently collected information, reports in this series undergo only limited internal review and may contain preliminary data; this information may be subsequently finalized and published in the formal literature. Consequently, these reports should not be cited without prior approval of the author or the Commercial Fisheries Management and Development Division.

TABLE OF CONTENTS

| | <u>Page</u> |
|---|-------------|
| LIST OF TABLES | iii |
| LIST OF FIGURES | iv |
| INTRODUCTION | 1 |
| NEW REGULATIONS | 2 |
| REGULATIONS | 3 |
| FISHERY LOCATION | 4 |
| HERRING STOCK STATUS | 5 |
| PERMIT APPLICATION PROCEDURES | 5 |
| PERMIT REQUIREMENTS | 6 |
| HARVEST OF KELP | 8 |
| ALLOCATION OF GUIDELINE HARVEST | 9 |
| FISHERY CONDUCT AND MANAGEMENT | 9 |
| HARVEST AND PRODUCTION | 10 |
| REQUIREMENTS FOR BUYERS | 10 |
| LICENSE REQUIREMENTS | 10 |
| REQUIREMENTS OF OTHER AGENCIES | 11 |
| Department of Natural Resources | 11 |
| U.S. Forest Service | 11 |
| National Marine Fisheries Service | 12 |
| United States Coast Guard | 12 |
| PRIVATE LANDS | 13 |
| LIST OF MANAGEMENT CONTACTS | 22 |

LIST OF TABLES

| | <u>Page</u> |
|---|-------------|
| 1. Craig/Klawock Stock Size and Bait Harvests, 1987-1995 | 14 |
| 2. Craig/Klawock Herring Roe-on-Kelp Fishery summaries, 1992-1994 | 15 |

LIST OF FIGURES

| | <u>Page</u> |
|--|-------------|
| 1. Diagram of typical herring spawn-on-kelp impoundment | 16 |
| 2. Generalized harvest strategy for Southeast Alaska herring stocks showing allowable percent annual harvest related to estimated biomass of mature stock expressed as a multiple of the established harvest threshold level | 17 |
| 3. Open area for Craig/Klawock pound fishery | 18 |
| 4. Private lands in the Craig/Klawock area | 19 |
| 5. Section 3-B | 20 |
| 6. Coast Guard requirements for marking pounds | 21 |

INTRODUCTION

This plan provides an overview of the management approach and regulations for the 1995 Spawn-On-Kelp Pound Fishery on the west coast of Prince of Wales Island near the communities of Craig and Klawock in Southeast Alaska. Staff biologists listed at the end of this document are available to answer questions regarding this plan. Pound operators are also advised to review requirements of other agencies as described on pp. 10-12.

A pound fishery involves releasing sexually mature herring into a net impoundment in which kelp is suspended. The herring are released from the pound after they spawn on the kelp, and the kelp with eggs are then sold. Examples of two types of herring pounds are shown in Figure 1.

Winter food and bait herring fisheries have occurred in District 3 (Meares Passage and in the Bocas de Finas area) since the 1960s. Seasonal landings from the 1960s through 1985 were small, averaging approximately 210 tons. From 1987-1991 the herring population grew dramatically in Section 3-B with annual landings averaging approximately 2,256 tons (Table 1). The herring population has declined in abundance since 1992 with average annual landings of 885 tons. This will be the fourth year that the Craig/Klawock herring spawn-on-kelp fishery has occurred. Fishing effort, harvest, spawning and fishery dates, and product values are summarized in Table 2.

The estimated size of the Craig/Klawock herring population is based upon the Age Structured Analysis (ASA) model used by department herring research personnel. The ASA model takes into account the previous year's escapement, annual mortality, growth, fecundity and recruitment. This is the second year the ASA model will be applied to herring fisheries in Southeast Alaska. Prior to last year, spawn deposition was the primary tool used by the department to determine mature biomass estimates of herring populations.

Annual harvest levels are based on a graduated scale that allows for higher harvests rates as the herring population increases relative to the threshold level (Figure 2). The established threshold level for the Craig/Klawock stock is 5,000 tons. The scale provides for a uniform method for establishing harvest levels for each of the herring fisheries in the region. No harvest is allowed if the biomass estimate for the stock is less than the threshold level; when the estimate of mature stock is at the threshold level a 10% harvest is allowed. The harvest rate increases 2% each time the estimated spawning biomass increases by an amount equal to the threshold level and reaches a maximum of 20% when the population is six times the threshold level.

In the spring of 1994, an estimated biomass of 7,252 tons of herring spawned along 8.0 nautical miles of shoreline in the Craig/Klawock area. Using this escapement in the ASA model, the forecast for the 1995 season is 6,778 tons. This allows for a harvest rate of approximately 10.7% of the mature herring stock, or a guideline harvest level of 726 tons for the Craig/Klawock stock.

In the Section 3-B spawn-on-kelp fishery, the harvest limit is 15% of the total guideline harvest level for the Craig/Klawock herring stock. The remaining 85% is allocated to the traditional herring bait and food fishery. No pound fishery will be allowed in Section 3-B if 15% of the overall quota is less than 100 tons. Therefore, the guideline harvest level for the 1995 Section 3-B herring spawn-on-kelp fishery is 15% of 726 tons, or 109 tons of herring. This should equal approximately 8.7 tons of spawn-on-kelp product. The remaining 85%, or 617 tons, will be harvested in the winter food and bait fishery.

The following is a calendar of events to be considered by pound operators for the 1995 fishing season:

- December 7 - Department of Fish and Game pound permit applications will be available.
- December 13-16 - Meetings in Klawock, Craig, Ketchikan, Petersburg, Juneau and Sitka to consider limited entry.
- January 31 - Deadline for submitting an application to the department.
- February 17 - The department will issue a permit to each applicant that has met the January 31 deadline.
- February 14 - U.S. Forest Service special-use permit applications are due (if needed).
- March 10 - A completed pound must be present on the fishing grounds by this date.
- March 13 - A department representative will be on the grounds to inspect each pound.
- March 15 - Allocations will be made for each pound operator that has a completed pound in the fishing area.
- March 16 - Kelp permits will be available.
- May 18 - Pounds must be completely removed from the water.

NEW REGULATIONS

At its January 1994 meeting, the Alaska Board of Fisheries approved the following regulations concerning maximum pound size. 5AAC 27.185 MANAGEMENT PLAN FOR HERRING SPAWN-ON-KELP IN POUNDS.

- (h) The maximum size for a herring pound net in Section 3-B may not exceed a 400 square foot opening at the water surface.

A minimum inside surface area of 250 ft² will be in effect again this year to avoid over-crowding the herring.

REGULATIONS

The Alaska Board of Fisheries approved the following regulations creating the pound fishery in Section 3-B [see 5AAC 27.110. FISHING SEASONS (f) and 5AAC 27.185. MANAGEMENT PLAN FOR HERRING SPAWN-ON-KELP IN POUNDS. (a), (b), and (c)(1) through (6)]:

1. Herring spawn-on-kelp in pounds may be taken only during periods established by emergency order.
2. Herring pounds for the taking of spawn-on-kelp may be operated only under terms of a permit issued by the department.
3. Pounds for the taking of herring spawn-on-kelp may be operated only in waters of Section 3-B in the waters of San Alberto Bay, Shinaku Inlet, and San Christoval Channel north of a line from Entrance Point to the southernmost tip of Clam Island to the southernmost tip of Fern Point and west of 133°20'00" W. longitude with the following restrictions:

Klawock Inlet and Big Salt Lake: all waters closed.

San Christoval Channel: closed in the waters of the main channel enclosed by 133°20'00" W. longitude, 55°35'37" N. latitude; 133°20'00" W. longitude, 55°35'10" N. latitude; 133°17'31" W. longitude, 55°33'22" N. latitude; 133°17'17" W. longitude, 55°33'30" N. latitude (Figure 3).

4. The current allocation allows for 109 tons of herring to be captured and transferred to the pounds. The spawn-on-kelp harvest objective was based on the ratio of one ton of spawn-on-kelp for each 12.5 tons of herring allocated to the fishery. This allows for a 1995 quota of 8.7 tons of spawn-on-kelp product. The department will manage the fishery to achieve this harvest objective by restricting those persons holding permits to a specified number of kelp blades.

5. The department shall divide the harvest allocation and the amount of herring available for impounding equally among permit holders.
6. The operator of a pound shall apply for a permit issued by the department no later than January 31 of each calendar year.
7. The permit must specify the following:
 - (a) The location where pounds may be operated.
 - (b) The date by which pounds must be operational.
 - (c) The size of, identification requirements for, and method of operation of pounds.
 - (d) The location and methods for taking, retainment, and release of herring and kelp to be used in a pound for the production of herring spawn-on-kelp.
 - (e) The harvest reporting requirements for pound operators.
 - (f) Other guidelines determined by the department to be necessary for the conservation and management of herring and kelp, and the health, safety, and general welfare of the public.
8. Herring intended for placement in herring spawn-on-kelp pounds may be captured only with purse seines or hand purse seines.

FISHERY LOCATION

The fishery, by regulation, was designated for the waters of Section 3-B, located in those waters of District 103 north of the latitude of Turn Point and south of the latitude of Cape Lynch (Figure 5). The open areas for pounds will be located near the areas of historical spawning, and will be the same as for the last three seasons; i.e., only in the waters of San Alberto Bay, Shinaku Inlet, and San Christoval Channel north of a line from Entrance Point to the southernmost tip of Clam Island to the southernmost tip of Fern Point and west of 133°20'00" W. longitude, with the following restrictions:

Klawock Inlet and Big Salt Lake: all waters closed.

San Christoval Channel: closed in the waters of the main channel enclosed by 133°20'00" W. longitude, 55°35'37" N. latitude; 133°20'00" W. longitude, 55°35'10" N. latitude; 133°17'31" W. longitude, 55°33'22" N. latitude; 133°17'17" W. longitude, 55°33'30" N. latitude.

HERRING STOCK STATUS

Available historical information indicates the herring spawning population on the west coast of Prince of Wales Island has increased substantially since the 1970's. From 1970 through 1987, spawning averaged 5.2 nautical miles. From 1988 through 1992, the average linear miles of spawn recorded increased to 27 nautical miles. However, in the spring of 1994 only 8.0 nautical miles of spawn was recorded. The ASA model forecasts a spawning biomass of 6,778 tons in 1995.

Herring spawning normally occurs in the Craig/Klawock area in mid to late March. The earliest observed spawn since the mid-1970's was March 9, with the latest date of initial spawning on April 3. Traditionally, herring spawn on Fish Egg, Wadleigh, Clam, and Abbess Islands. As the herring stock has grown, spawning has been recorded in the area of Portillo Channel, Port Real Marina, the northern shore of San Fernando Island, and along the Prince of Wales Island shore at San Christoval Channel and Shinaku Inlet. In 1992 the fishery was opened to seining on March 18, in 1993 on April 17, and in 1994 seining opened April 5.

PERMIT APPLICATION PROCEDURES

To establish eligibility for the 1995 fishery, a pound operator must submit an application for a Craig/Klawock pound permit to any Southeast Alaska Fish and Game office by January 31, 1995. Applications sent by mail must be postmarked no later than January 31. Applications received or postmarked after this date will not be accepted. Permit applications will be available by December 7, 1994 at any department area office, or they can be obtained by writing the Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, 2030 Sea Level Drive #205, Ketchikan, Alaska 99901. Original applications are required.

On or about February 17, 1995, the department will issue a permit to each applicant who has met the January 31, 1995 deadline. The permit will specify conditions that will be required of each pound operator.

PERMIT REQUIREMENTS

Existing regulations require the department to establish permit stipulations for management of the Section 3-B pound fishery. The following stipulations will be specified on each permit:

1. A herring spawn-on-kelp pound is defined as a rigid frame structure with adequate buoyancy to support a net enclosure and spawn-on-kelp, used to retain herring alive over extended periods of time. If 150 lbs of weight placed on any side of the pound submerges a side of the structure, the pound will be declared ineligible.
2. Each permit holder must operate a single pound. Pound operators may cooperatively work among themselves by connecting and anchoring their pounds together. However, each pound must have its own net enclosure and be capable of retaining herring when separated from other pounds. Pounds may not share a common wall.
3. Each permit holder is required to have a completed pound in the fishing area by March 10, 1995. A pound will be considered complete when it is fully assembled, anchored offshore, and ready for the installation of the webbing. A department representative will be in the fishing area on March 13 to ensure each pound is fully assembled. It is not necessary for the permittee to be at his pound site when this inspection is being conducted. However, pounds must be clearly identified as stated in requirement 4, below.
4. Permit holders may locate their pounds only in locations identified by the department. Pounds will may be operated only in waters of Section 3-B in the waters of San Alberto Bay, Shinaku Inlet, and San Christoval Channel north of a line from Entrance Point to the southernmost tip of Clam Island to the southernmost tip of Fern Point and west of 133°20'00" W. longitude, with the following restrictions:

Klawock Inlet and Big Salt Lake: all waters closed.

San Christoval Channel: closed in the waters of the main channel enclosed by 133°20'00" W. longitude, 55°35'37" N. latitude; 133°20'00" W. longitude, 55°35'10" N. latitude; 133°17'31" W. longitude, 55°33'22" N. latitude; 133°17'17" W. longitude, 55°33'30" N. latitude.

5. Each pound must be identified by an upright sign in a conspicuous place with the permittee's full name and the number which is assigned to each operator. In addition, the number must also be permanently affixed to the top surface of the pound structure. Letters and numbers must be at least 6 inches high and with lines at least 1/2-inch wide that contrasts with the background. Operators with pounds that are not clearly identified will not be able to participate in the fishery.

6. The pound must be constructed so there is a minimum inside surface area of 250 ft². This requirement is necessary to avoid over-crowding the herring. A maximum pound size of 400 ft². inside surface area will be in effect during the 1995 season.
7. Webbing used for the pounds must be no larger than 1-1/4 inch mesh (standard herring seine web is suggested). This restriction is necessary to avoid the gilling of herring in the pound.
8. Each pound must be constructed to include six feet of surplus webbing. The webbing should be gathered at the surface in such a manner that it can be easily lowered into the water if the submerged webbing becomes egg-saturated to the extent that it prevents adequate water circulation which could cause suffocation of impounded herring.
9. Each permit holder must be physically present at the pound fishing site at all times during the "operation of the pound." "Operation of the pound" is defined as: 1) the placement of kelp into the pound structure, 2) the capture and transfer of herring into the pound, and 3) the collection and sale of herring spawn-on-kelp product.
10. The opening date when operators may capture herring to be transferred into the pounds will be set by department personnel on the grounds. The department will give sufficient on-the-grounds notice of the opening date and time so that all fishermen are given a chance to capture herring.
11. Purse seines and hand purse seines will be the only legal gear to harvest herring for the pounds. The size of the sets should be small, usually no more than 10 tons of herring should be harvested at one time.
12. The transport of herring to the pound site must be done with the pound itself or a towable net pen. Transporting with a purse seine will not be allowed. Pound operators are also advised to tow slowly to avoid crushing herring against the net.
13. The transfer of herring from the purse seine to the pound must be conducted in such a manner that handling mortality is minimized. Brailing, dipnetting, or rolling herring into the pound will not be allowed. An acceptable method is to bring the seine and pound together and sink a portion of each to allow herring to swim freely from the seine into the pound.
14. As a general rule, herring may be held for a maximum of eight days or until they are 80% spawned out, whichever occurs first. Retention of herring for longer periods will be allowed only with special authorization by the department.

15. Open pounding will not be a legal method of operating a pound. Nets may not be lowered in a pound to allow for free movement of herring into a pound. Pound operators may only lower their nets when transferring herring into the pound and when releasing herring immediately prior to the time the spawn-on-kelp will be harvested.
16. An operator may introduce only one allocated limit of herring into his/her pound. Operators will not be allowed to release their herring and then capture more herring for the same pound.
17. Each permit holder's spawn-on-kelp product must remain separate from the other permit holders until after processing.
18. After release of the captured herring, the pound, including webbing, will remain in place for a minimum of four weeks. Egg-covered webbing must remain on the pound frame in the original configuration with adequate water circulation on all sides to optimize hatching success. The department will notify pound operators through a news release when pounds may be removed from the water.
19. Permit holders who discontinue their operations must notify the department and surrender their permits within 24 hours.
20. The permit must be in the possession of the pound operator at all times.
21. The pound structure must be completely removed from the water by May 18, 1995.

HARVEST OF KELP

A separate permit is required to harvest kelp to be used in the pounds (5AAC 37.900). Kelp harvest permits may be obtained from local department offices. Approximately 2.9 tons of kelp is needed to produce 8.7 tons of spawn-on-kelp. Kelp permits may be pooled and one or more individuals can harvest for a group of pound operators. Kelp permits may be obtained from the department's office in Ketchikan and must be completed and returned to the department within 30 days after the harvest.

ALLOCATION OF GUIDELINE HARVEST

On, or about March 15, 1995, the 109-ton allocation of herring, and the 2.9-ton allocation of kelp necessary to produce the spawn-on-kelp will be divided equally among all permit holders who have completed pounds in the fishing area by March 10. Notification of the individual allocations will be announced by news release. Further adjustments to the individual allocations may occur after March 15, 1995 if a significant number of permit holders drop out of the fishery after this date.

Deadloss resulting from the capture, transfer, and holding of herring will be subtracted from individual pound allocations.

FISHERY CONDUCT AND MANAGEMENT

Suitable sites for pounds in the Craig/Klawock area are limited. To avoid herring mortality and damage to the pounds, operators should locate their pounds in an area with minimal exposure to wind and wave action, and with a relatively deep bottom. The distance from where the herring are captured and the pound site should also be considered since long towing distances can cause considerable stress and mortality of herring.

The department will station personnel in the Craig/Klawock area beginning approximately March 13, 1995. Department personnel will closely monitor herring activities and all phases of the fishery to assure compliance with permit conditions. All fishery announcements, including updates of herring activities and fishery openings, will be broadcast by VHF radio, Channel 10. Fishermen are strongly encouraged to have a VHF radio.

The department will be closely monitoring herring activity in the Craig/Klawock area by vessel and aerial surveys. The department will set a date and time that pound operators may capture herring to be transferred into pounds by Emergency Order.

Department personnel will closely monitor the capture and transfer of herring into pounds to ensure that allocations are not exceeded and to document any mortality of herring. Pound operators are advised to use extreme caution when towing herring from the capture site to the pound site since towing can be a source of significant mortality if not conducted properly. To avoid mortality, the transport of herring to the pound site must be done with the pound itself or a towable net pen. Transporting with a purse seine will not be allowed. Pound operators are also advised to tow slowly to avoid crushing herring against the net. The department will regulate the fishery by setting and enforcing a strict limitation on the number of kelp blades that can be put in each permit holder's pound. Each pound operator must attach to each

individual line holding the kelp blades in their pounds the exact number of blades on that line. Pound operators will then be allowed to harvest all of the spawn-on-kelp from their pounds.

HARVEST AND PRODUCTION

Each permit holder's spawn-on-kelp blades must remain separate from other permit holder's spawn-on-kelp blades until after processing. Permit holders will be allowed to harvest all the product produced in their pounds. A permit holder's fish ticket must report only the spawn-on-kelp harvested from his/her pound.

REQUIREMENTS FOR BUYERS

Operators of floating processing vessels will be required to report in person, by VHF radio, or by telephone, to the Alaska Department of Fish and Game office in Ketchikan before the start of processing operations in the Craig/Klawock fishery. These reporting requirements are specified by regulation 5AAC 39.130 (f).

Fish tickets must be submitted to the department within seven days after landing. Fish tickets should be sent to the Alaska Department of Fish and Game, Division of Commercial Fisheries, 2030 Sea Level Drive #205, Ketchikan, Alaska 99901, or submitted to a representative of the department before leaving the fishing area.

LICENSE REQUIREMENTS

In addition to ADF&G permits required to operate a pound and harvest kelp for transport into a pound, operators must also obtain an interim use permit (L21A) from the Commercial Fisheries Entry Commission. Individuals who do not have pound permits but are assisting in the operation of the fishery in any manner must have a crew member license. All commercial vessels used in the fishery (including skiffs) are required to be licensed with the Commercial Fisheries Entry Commission. Fishermen are required to display the permanent vessel license plate (ADF&G number) on both sides of the hull, cabin, or mast in permanent symbols at least 12 inches high and with lines at least 1-inch wide that contrast with the background.

Applications for vessel and interim use permits are available from all offices of ADF&G or they can be obtained by writing the Commercial Fisheries Entry Commission, 8800-109 Glacier Hwy, Juneau, Alaska 99801-8079. Fishermen are reminded to apply for all licenses well in advance of the fishery since it often takes up to three to four weeks to obtain them. Crew member licenses may be obtained from local vendors in most communities.

REQUIREMENTS OF OTHER AGENCIES

Prospective pound operators are advised to consider the requirements that other agencies may have to construct and operate pounds in the Craig/Klawock fishery. Some of these requirements are discussed briefly below; however, a pound operator is urged to contact the Alaska Department of Natural Resources (DNR), the U.S. Forest Service, the National Marine Fisheries Service (NMFS), and the United States Coast Guard to determine other requirements or restrictions. The fishery may also be adjacent to privately held lands. Pound operators should check current maps available at the department to determine land ownership.

Department of Natural Resources

The Alaska Department of Natural Resources (907-465-3400) controls use of tide and submerged lands seaward of mean high water (9.1 ft.). No DNR permits will be required for pound operations; however, a permit is needed for longer term storage of logs.

U.S. Forest Service

In the Craig/Klawock area, the U.S. Forest Service has jurisdiction over, and manages the land above mean high tide which is not privately owned. People who plan to use national forest land in connection with the fishery must apply for a special use permit from the Forest Service prior to any occupancy. These land uses include temporary camps, temporary equipment storage, and herring pound storage. Since this is a commercial venture, free wood will not be available for pound construction.

Special use permit applications are available at the Craig Ranger District. Completed applications should be submitted to the Craig Ranger District by February 14, 1995. The permit fee is \$100.00, and in most cases a bond will be required.

Firewood for personal use may be taken free of charge. Only dead or downed trees may be used for firewood.

Please contact the Craig Ranger District with any questions about use or occupancy of National Forest lands.

National Marine Fisheries Service

The National Marine Fisheries Service (907-747-6940) regulates activities which might harm marine mammals. Herring pounds are classed as a Category 3 fishery, which means that participating fishermen do not need to apply for an "exemption". Fishermen may not kill sea lions, sea otters, whales, porpoises, or dolphins. Fishermen must report any mortality of marine mammals associated with their activities. Since federal regulations may change at any time, fishermen should check with their local NMFS office before fishing.

United States Coast Guard

Structures such as floating fish pens are subject to the requirements of the Code of Federal Regulations, Title 33, Part 64. This regulation requires an owner to apply for a Coast Guard permit and to install and maintain a light or other private aid to navigation if the Coast Guard determines it to be necessary to protect maritime navigation.

The proposed pens of the Craig/Klawock Spawn-on-Kelp Pound Fishery do not require permits for private aids to navigation at this time, provided the owners:

1. Place two signs on opposite corners of the structure. These signs will be worded "Danger, Fish Pens" (Figure 6).
2. Place a single, all-points white light on one corner of structures less than 400 sq. ft. in size.
3. Place a single, all-points white light on every corner of structures larger than 400 sq. ft. in size.
4. Anchor fish pens within the boundary area specified by this permit.
5. Remove the pens from the water by May 18, 1995.

If all these conditions are not met, the permit holder must apply to the Coast Guard for an individual "Private Aids to Navigation permit". If you have questions, call Master Chief Yates at the Coast Guard Aids to Navigation office, at 463-2245.

PRIVATE LANDS

Some of the area in which pounds may be operated is adjacent to privately owned lands. Pound operators should contact the land owners if they intend to use any of that land above mean high tide. Private land owners include the Klawock/Heenya Corporation, Shaan-Seet Corporation, and SeaAlaska Corporation. Figure 4 shows the approximate areas of privately held lands in the Craig/Klawock area.

Table 1. Craig/Klawock Stock Size and Bait Harvests, 1987-1995.

| YEAR | MILES OF SPAWN | BIOMASS (TONS) | BAIT QUOTA | BAIT HARVEST |
|-------|-------------------|----------------|---------------|-----------------|
| 86-87 | 2.0 | 10,250 | 1,060 | 1,043 |
| 87-88 | 5.0 | 16,350 | 2,728 | 2,014 |
| 88-89 | 27.0 | 19,800 | 1,810 | 1,691 |
| 89-90 | 31.7 | 18,350 | 3,150 | 3,220 |
| 90-91 | 30.0 | 17,800 | 2,814 | 3,272 |
| 91-92 | 22.0 | 12,350 | 2,280 | 2,295 |
| 92-93 | 22.6 | 7,495 | 1,362 | 623 |
| 93-94 | 8.4 | 7,252 (ASA) | 760 | 636 |
| 94-95 | 8.0 | 6,778 (ASA) | | 617 |

Table 2. Craig/Klawock Herring Roe-on-Kelp Fishery summaries, 1992-1994.

| FISHERIES INFORMATION | 1992 | 1993 | 1994 |
|-------------------------------|-------------|-------------|------------|
| Herring quota | 403 | 240 | 135 |
| Product quota | 32.3 | 19.2 | 10.8 |
| Total harvest (tons) | 25.7 | 5.7 | 16.5 |
| Ex-vessel value | \$180,000 | \$47,882 | \$364,199 |
| Aver. price/pound | \$3.50 | \$4.17 | \$11.00 |
| Aver. income/landing | \$784.70 | \$2,081.00 | \$4,388.00 |
| Number of applicants | 531 | 389 | 257 |
| Number of pounds in fishery | 248 | 209 | 147 |
| Number of landings | 229 | 23 | 83 |
| Herring allocation (tons) | 1.6 | 1.15 | 1 |
| Blade quota (tons) | 8.0 | 6.4 | 3.75 |
| Blade allocation | 310 | 292 | 233 |
| Total kelp harvest (tons) | 7.8 | 3.7 | 3.0 |
| Herring spawning dates | 3/15 - 4/10 | 3/26 - 4/21 | 3/23-4/12 |
| Miles of spawn | 22.6 | 8.4 | 8 |
| Spawning stock biomass (tons) | 12,350 | 7,495 | 7,252 |
| Seining opened/closed | 3/18 - 3/23 | 4/17 - 4/28 | 4/5-4/18 |

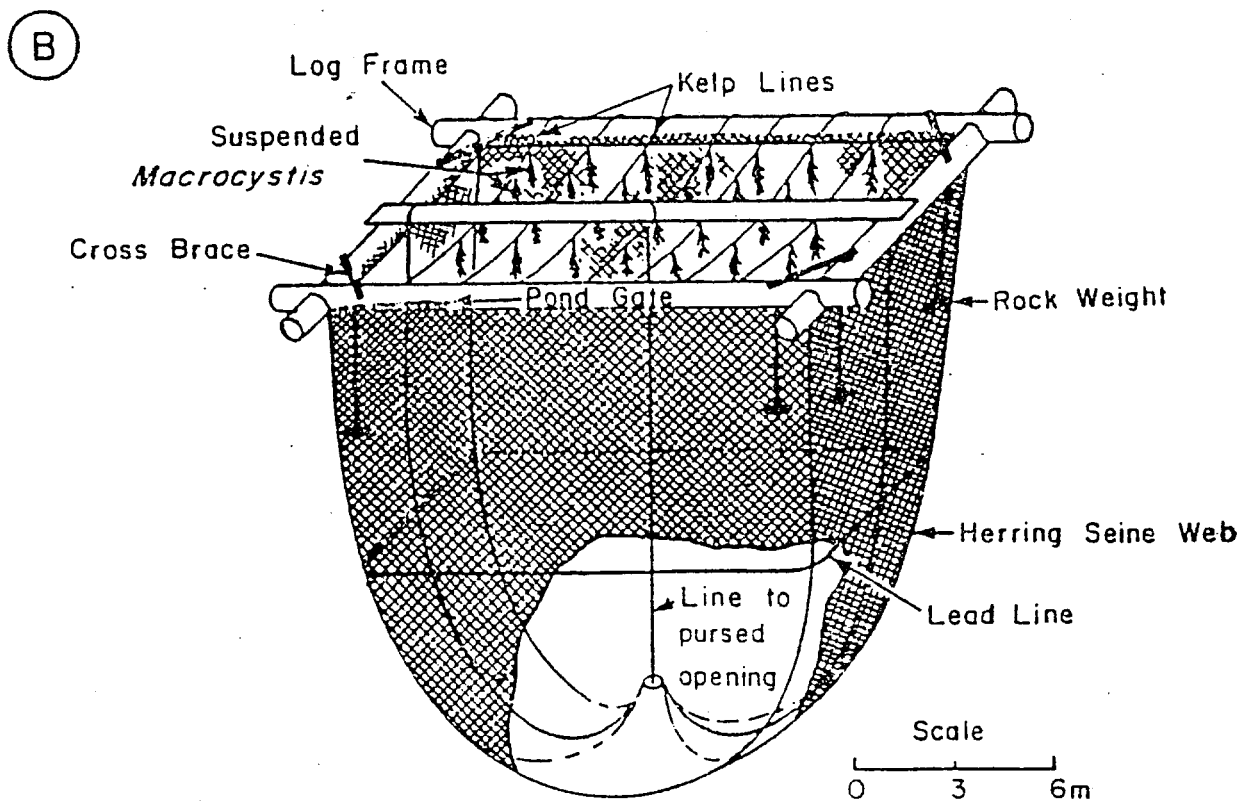
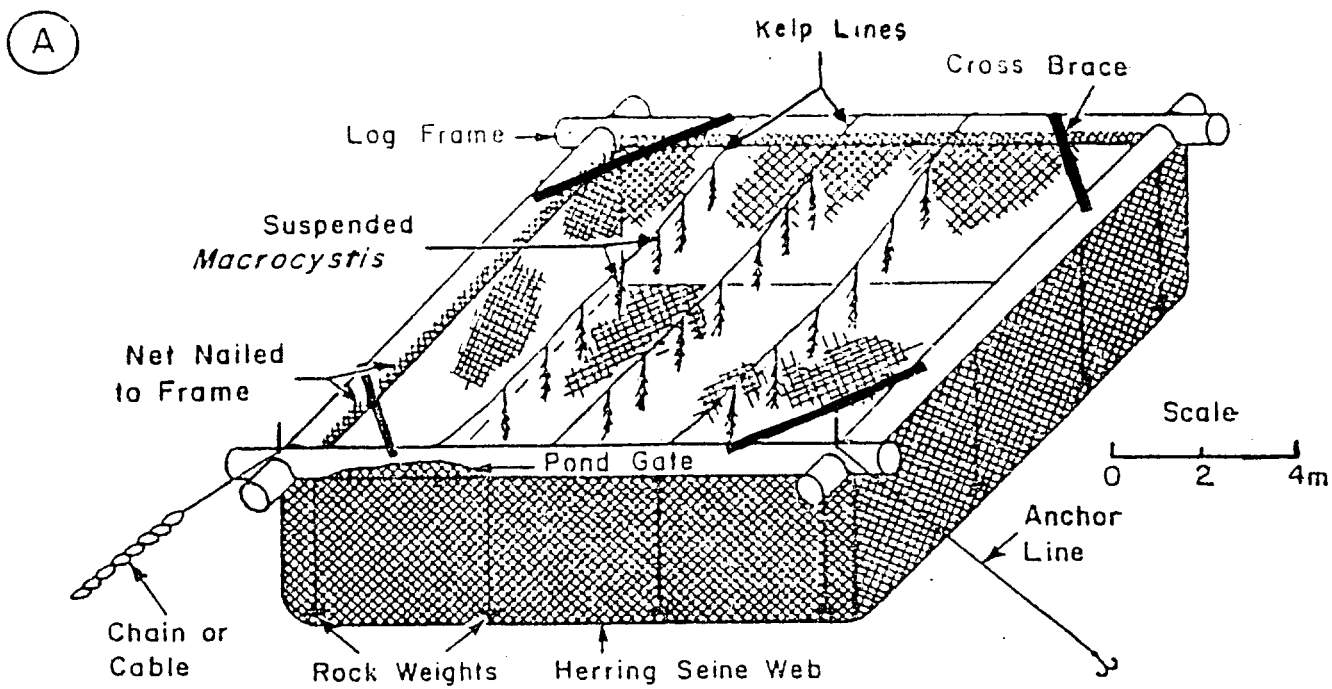
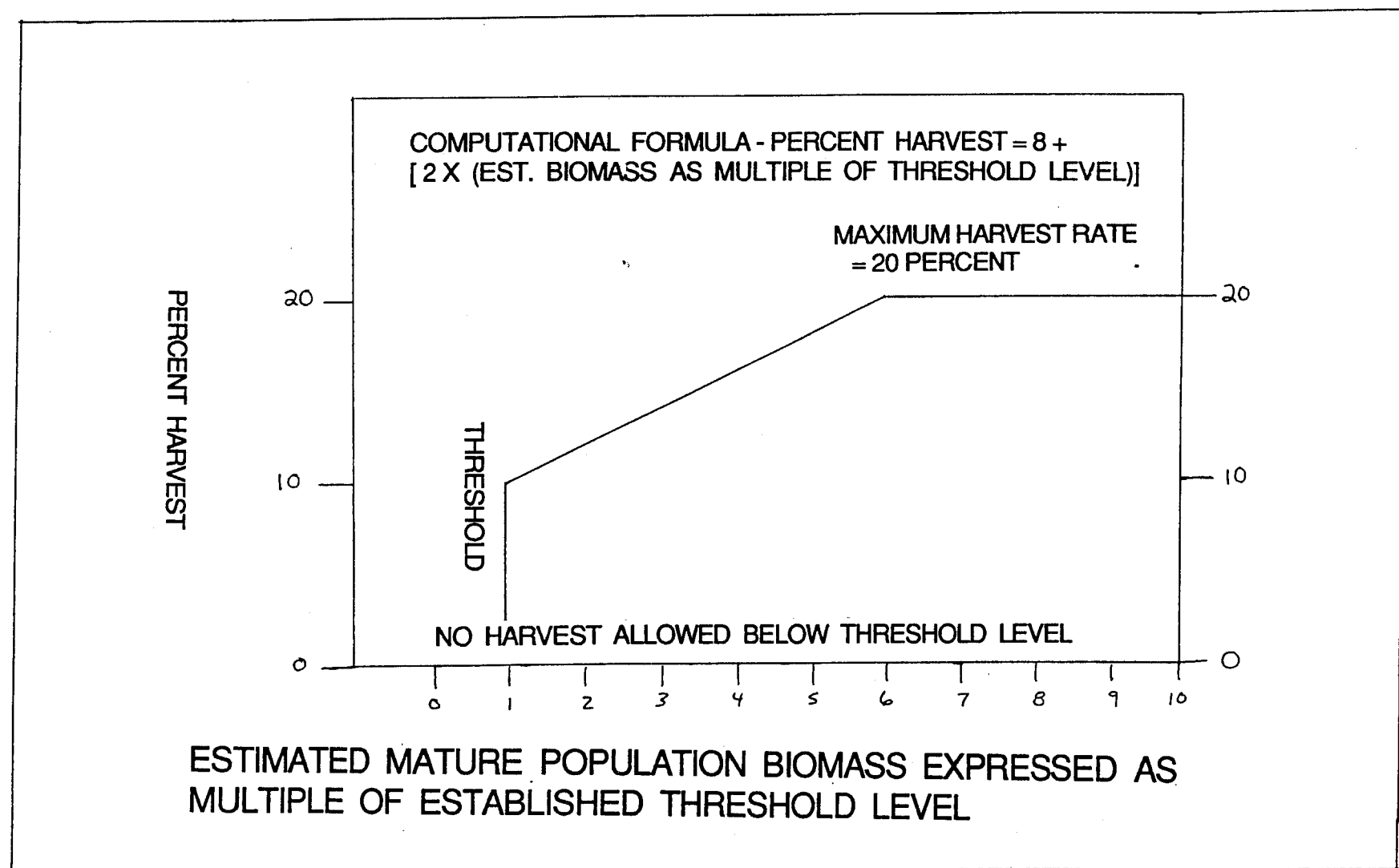


Figure 1. Diagram of typical herring spawn-on-kelp impoundment. (A=shallow water, B=deep water.)

Figure 2. Generalized harvest strategy for Southeast Alaska herring stocks showing allowable percent annual harvest related to estimated biomass of mature stock expressed as a multiple of the established harvest threshold level.



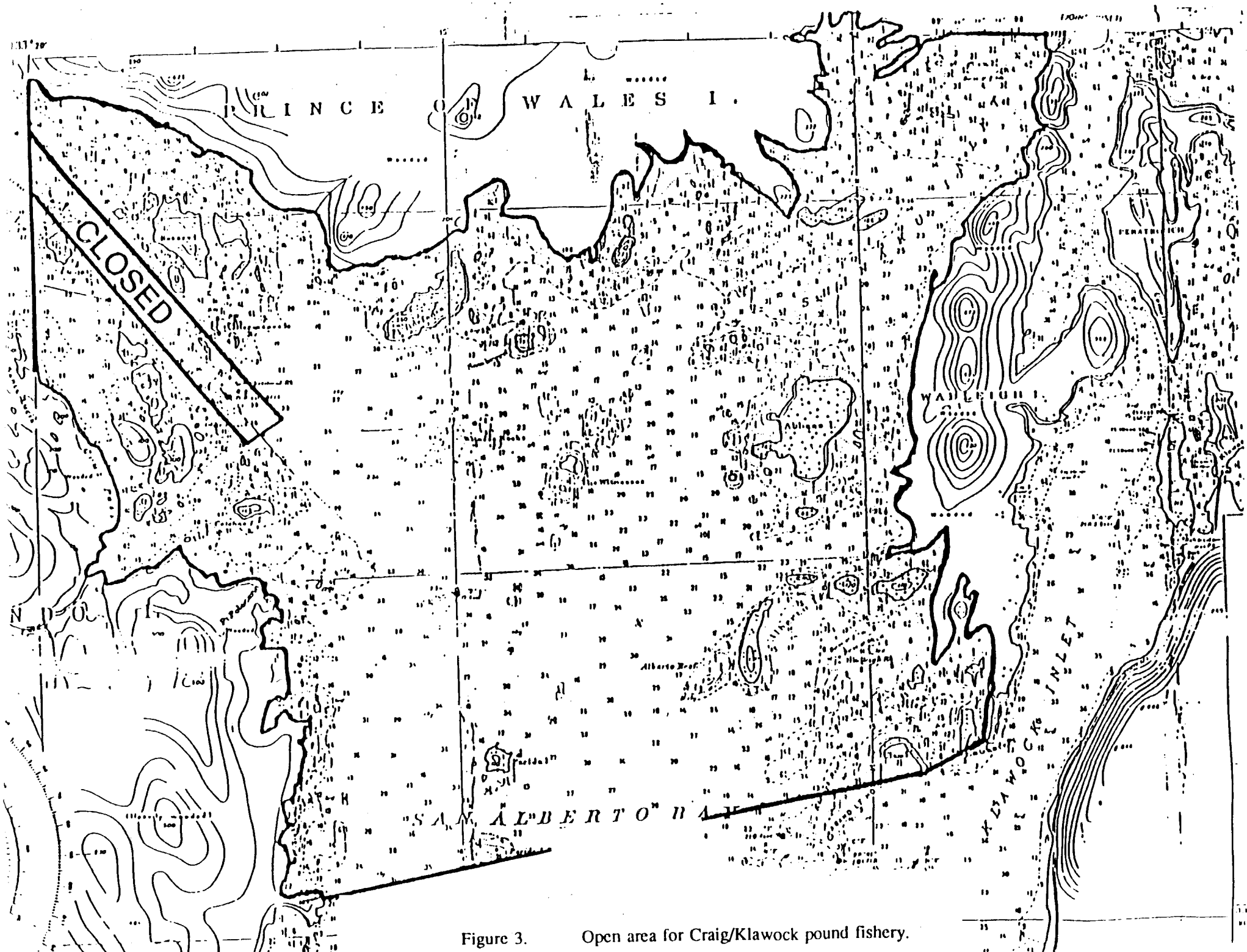


Figure 3. Open area for Craig/Klawock pound fishery.

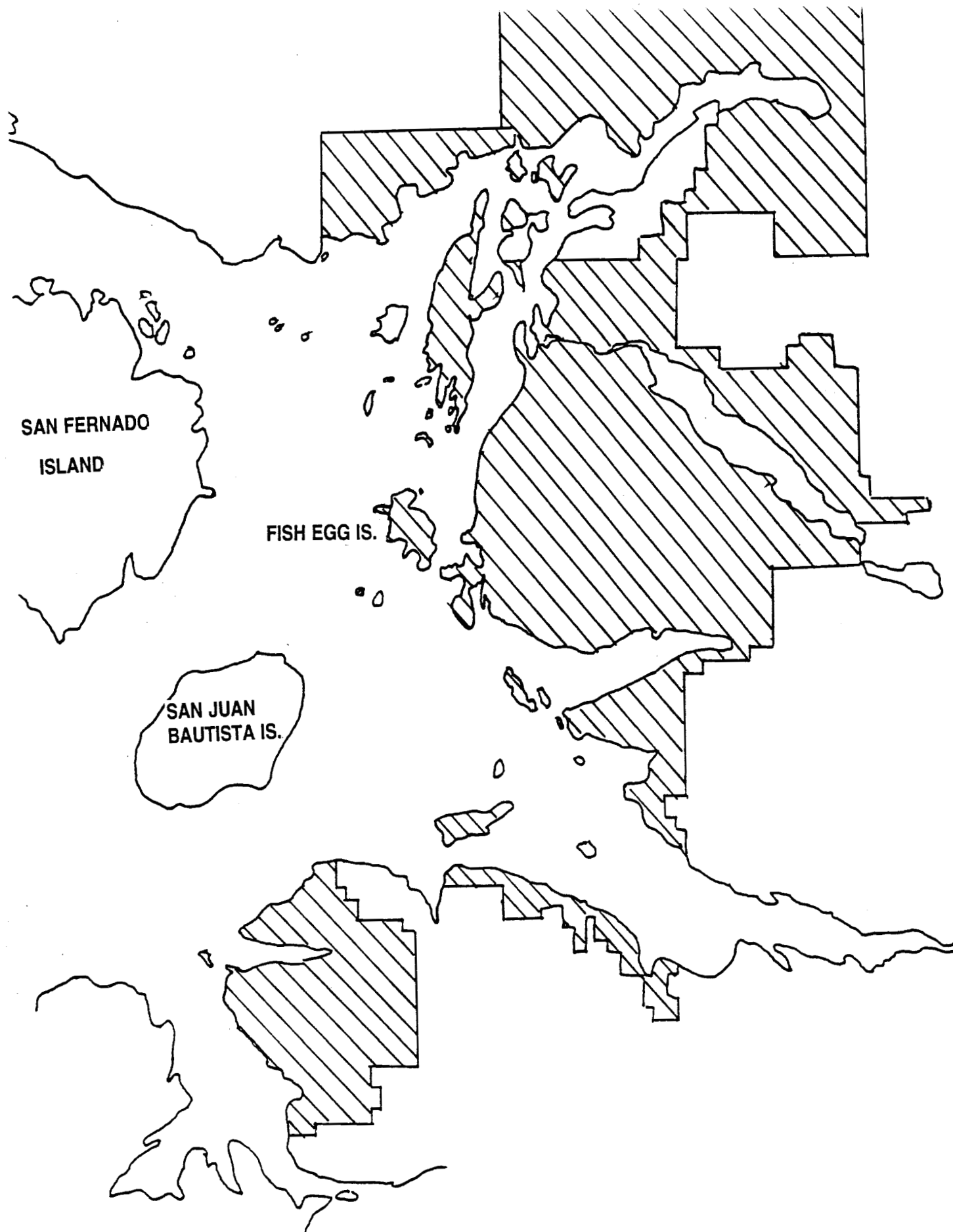


Figure 4. Private lands in the Craig/Klawock area.

Craig-Klawock Spawn-On-Kelp Fishery

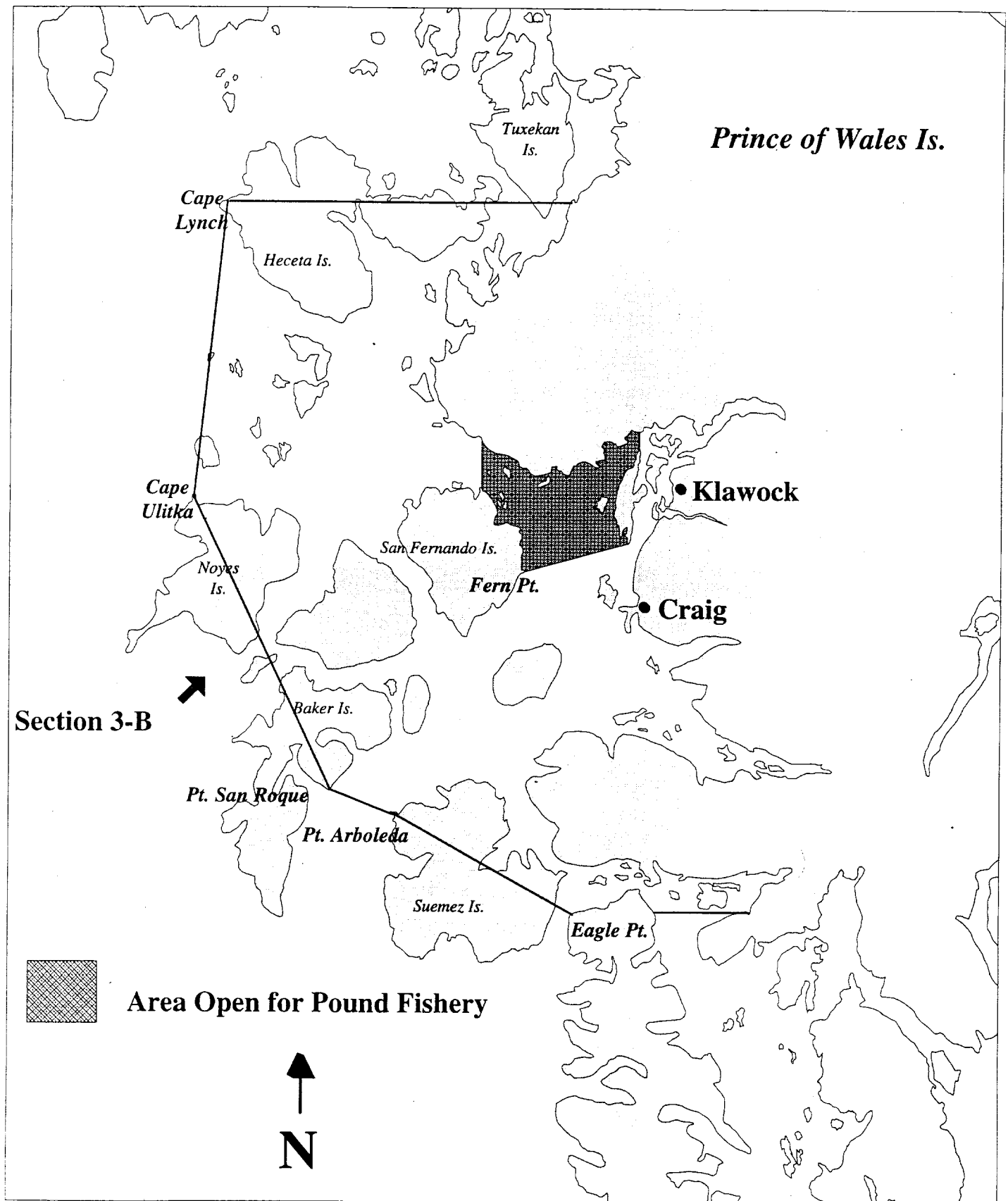


Figure 5. Section 3-B.

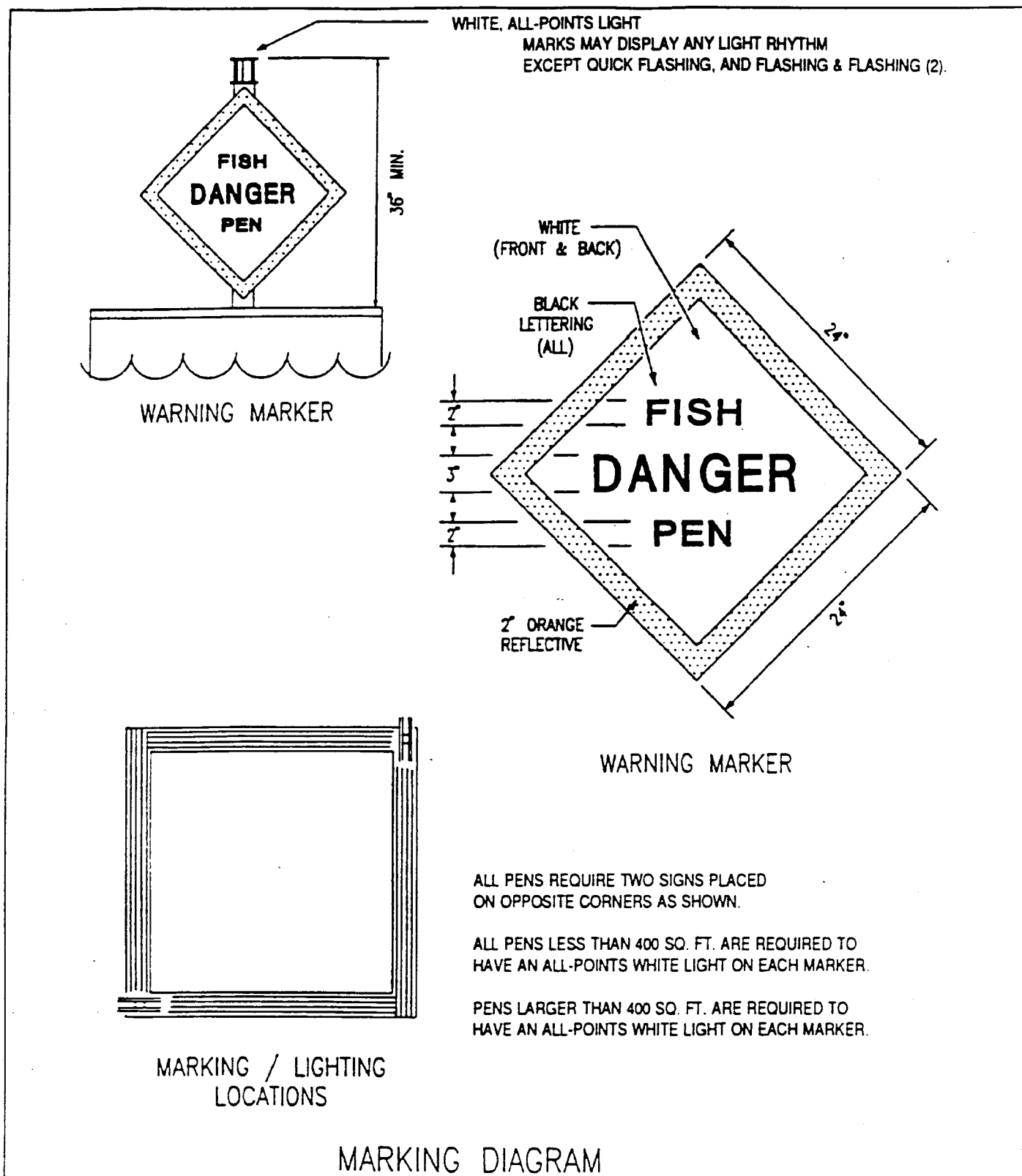


Figure 6. Coast Guard requirements for marking pounds.

LIST OF MANAGEMENT CONTACTS

Following are Commercial Fisheries Division contacts regarding this management plan:

Scott Marshall
Region I Supervisor

P.O. Box 240020
Douglas, Alaska 99824
(907) 465-4250

Doug Mecum
Region I Management Biologist

P.O. Box 240020
Douglas, Alaska 99824
(907) 465-4250

Andy McGregor
Area Management Biologist

P.O. Box 240020
Douglas, Alaska 99824
(907) 465-4250

Robert Larson
Herring Research Biologist

P.O. Box 667
Petersburg, Alaska 99833
(907) 772-3801

Phil Doherty
Area Management Biologist

2030 Sea Level Dr. Ste. 205
Ketchikan, Alaska 99901
(907) 225-5195

William Bergmann
Area Management Biologist

P.O. Box 667
Petersburg, Alaska 99833
(907) 772-3801

Randy Timothy
Assistant Area Biologist

P.O. Box 200
Wrangell, Alaska 99929
(907) 874-3822

Bob DeJong
Area Management Biologist

304 Lake St., Rm. 103
Sitka, Alaska 99835
(907) 747-6688

Ray Staska
Area Management Biologist

P.O. Box 431
Haines, Alaska 99827
(907) 766-2830

ADA Publications Statement

The Alaska Department of Fish and Game administers all programs and activities free from discrimination on the basis of sex, color, race, religion, national origin, age, marital status, pregnancy, parenthood, or disability. For information on alternative formats available for this and other department publications, contact the department ADA Coordinator at (voice) 907-465-4120, (TDD) 907-465-3646. Any person who believes s/he has been discriminated against should write to: ADF&G, P.O. Box 25526, Juneau, AK 99802-5526; or O.E.O., U.S. Department of the Interior, Washington, DC 20240.